

Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 18, with the following paragraph:

It is known in the prior art to provide a cleaning device having a brush assembly for scrubbing of a cleaning surface being cleaned. One example of a cleaning device with a vertical axis brush assembly is illustrated by commonly-owned pending U.S. patent application having serial number 09/955,725 and publication number 20030051308 to Morgan, et al. Other devices or machines have roller-type brush assemblies, such as that disclosed in U.S. patent 6,041,472 issued to Kasen, et al., or fixed brush assemblies, such as that illustrated by ~~commonly own~~ commonly-owned patent application having serial number 10/340,291 to Gerber, et al. Typically, brush assemblies from ~~theses~~ these and other machines have trouble cleaning grout, recessed, or other uneven areas of the cleaning surface.

Please replace the paragraph beginning at page 5, line 4, with the following paragraph:

Figure 12 is a front perspective view of a brush assembly according to still another embodiment of the present invention.

Please replace the paragraph beginning at page 5, line 10, with the following paragraph:

Referring to the drawings, FIG. 1 depicts a perspective view of an upright hard floor-cleaning unit 40 having a brush assembly of one embodiment of the present invention. The hard floor-cleaning unit 40 comprises an upright handle assembly 42 pivotally connected to the rear portion of a base assembly 44 that moves and cleans along a surface. The base assembly 44 includes a nozzle assembly 62 with a squeegee 66 for recovering particles and/or fluid from the floor and a brush block assembly 216 (FIG. 2A) for scrubbing the floor. The handle assembly 42 includes a recovery tank 53 for collecting the particles and/or fluid picked up by the nozzle assembly 62 and a solution distribution system having a solution tank 43 containing cleaning solution for distribution on the floor. Both the nozzle assembly 62 and brush block assembly 216 are removable from the base assembly 44.

Further details of the cleaning unit 40 are disclosed in the co-pending patent application number 09/956,297[[]], the disclosure of which is incorporated by reference.

Please replace the paragraph beginning at page 5, line 23, with the following paragraph:

Referring to FIG. 2, the brush block assembly 216 comprises a brush support plate 218 having six spaced-apart openings 220A, 220B, 220C, 220D, 220E, and 220F. Fixedly received within the openings 220 are bushings 222A, 222B, 222C, 222D, 222E, and 222F which, in turn, rotatably receive axial shafts 224A, 224B, 224C, 224D, 224E, and 224F of gear brushes 226A, 226B, 226C, 226D, 226E, and 226F. The gear brushes 226A-F rotate on a vertical axis. A drive shaft 225 having a square cross section is welded to the axial shaft 224B of the gear brush 226B adjacent the right outer brush 226A. Each of the gear brushes 226 is basically configured as a spur gear having ten teeth 228 that intermesh such that when one gear brush 226 rotates, all other gear brushes 226 rotate accordingly. The center hub of gear brushes 226 forms a hollow, downwardly-projecting cup 230 having a multiplicity of openings 232 circumscribing the bottom thereof for dispensing the cleaning solution from the solution tank 43 to the cleaning surface.

Please replace the paragraph beginning at page 6, line 20, with the following paragraph:

With ~~continue~~ continued reference to FIG. 2, the brush support plate 218 includes a plurality of troughs 244A, 244B, 244C, 244D for receiving the cleaning solution that flows from a distributor 246 (FIG. 2A) positioned thereon. Cleaning solution received in the troughs 244 flows through openings 248 in them and into the center cups 230 of the brushes 226. Once deposited within the ~~brush~~ center cup 230, the cleaning solution flows outward toward the surface being cleaned through openings 232 in the bottom of the ~~brush~~ center cups 230. The cups 230 contain the cleaning solution as the gear brushes 226 rotate and, thus, prevent solution from being sprayed outward over the top of the gear brush 226. The gear guard 236 is designed to withstand impact and prohibit cleaning solution from resting on its inner lip 231. In particular, the bottom surface 241 of the inner lip 231 inclines downwardly to the edge of the inner lip 231 to direct the flow of cleaning solution off the inner lip 231.

Please replace the paragraph beginning at page 7, line 8, with the following paragraph:

During manufacturing of the brush assembly 216, the gear brush axial shafts 224 are first inserted into the appropriate bushing 222, and with gear brushes 226 in their uppermost position and[[,]] with gear teeth 228 intermeshed between the gear brushes 226. As also seen in FIGS. 3,4 and 5, 3, 4, and 5, each gear tooth 228 has a blind bore[[,]] extending to offset 233 into which pliable elements in the form of bristles 136 define bristle bundles 134 which are compressively inserted therein and extend downwardly to the cleaning surface. The bristle bundles 134 are arranged in an outer ring 137 around the gear ~~brush 226 brushes 226~~, as seen in FIG. 3.

Please replace the paragraph beginning at page 7, line 16, with the following paragraph:

Each of the bristles 136 slope or flare outwardly with respect to the brush assembly 216 at an angle of twenty degrees with respect to the vertical axis of the gear ~~brush brushes~~ 226. The bristles 136 could slope outwardly at other angles too, such as, for example, those within the range of ten to thirty degrees. Such an outward sloping of bristles 136 allows the bristles 136 to flex at various heights, thereby allowing the bristles 136 to get into and scrub the grout or other recessed areas of the cleaning surface.

Please replace the paragraph beginning at page 7, line 22, with the following paragraph:

FIGS. 6 through 10 depict another embodiment of the present invention. The same reference numbers will be used for elements that are similar in structure and function as the previous embodiment. As illustrated in FIG. 7, the brush block assembly 316 comprises a brush support plate 218 having six spaced-apart openings 220A, 220B, 220C, 220D, 220E, and 220F. Fixedly received within the openings 220 are bushings 222A, 222B, 222C, 222D, 222E, and 222F which, in turn, rotatably receive axial shafts 224A, 224B, 224C, 224D, 224E, and 224F of gear brushes 326A, 326B, 326C, 326D, 326E, and 326F. The gear brushes 326A-F rotate on a vertical axis. A drive shaft 225 having a square cross section is welded to the axial shaft 224B of the gear brush 326B adjacent the right outer brush 326A. Each of the gear brushes 326 is basically configured as a spur gear having ten teeth

228 that intermesh such that when one gear brush 326 rotates, all other gear brushes 326 rotate accordingly. The center hub of gear brushes 326 forms a hollow, downwardly-projecting cup 230 having a multiplicity of openings 232 circumscribing the bottom thereof for dispensing the cleaning solution from the solution tank 43 to the cleaning surface.

Please replace the paragraph beginning at page 8, line 13, with the following paragraph:

During manufacturing of the brush assembly 316, the gear brush axial shafts 224 are first inserted into the appropriate bushing 222, and with gear brushes 326 in their uppermost position and[[],] with gear teeth 228 intermeshed between the gear brushes 326. As best seen in FIGS. 8-10, each gear brush 326 includes a gear tooth 228 having a blind bore[[],] extending to offset 233 into which pliable elements in the form of bristles 331, 332 define bristle bundles 334 which are compressively inserted therein and extend downwardly to the cleaning surface. The bristle bundles 334 are arranged in an outer ring 337 around the gear brush brushes 326. Each of the bristle bundles 334 includes inner and outer bristle groups 335, 338, respectively, that slope or flare outwardly with respect to the brush assembly 316 at an angle of thirty degrees with respect to the vertical axis of the gear brush brushes 326. The bristles 331 of the outer bristle group 338 are longer than the bristles 332 of the inner bristle group 335. The inner bristle group 335 is also trimmed outwardly at an angle of forty-five degrees with respect to the cleaning surface, such that the length of each successive bristle going from the inner end 340 to the outer end 342 of the inner group 335 is longer than that of the previous bristle. For example, as illustrated in FIG. 10, bristle 332C is longer than 332B, which is longer than 332A and so forth. Thus, when the bristles in each bristle bundle 334 are flexed outwardly, the tips 344 of the bristles 332 in the inner bristle group 335 contact the cleaning surface to provide better scrubbing action.

Please replace the paragraph beginning at page 9, line 8, with the following paragraph:

The gear brush brushes 326 further includes include a second set of bristles 346, 348 defining bristles bristle bundles 350 which are received in blind bores and arranged in an inner ring 352 around the gear brush brushes 326. These bristle bundles 350 are shorter in length than the bristle bundles 334 of the outer ring 337. Each of the bristle bundles 350

includes inner and outer bristle groups 354, 356, respectively, that flare outwardly with respect to the brush assembly 316 at an angle of thirty degrees with respect to the vertical axis of the gear brush. The bristles 346 of the outer bristle group 356 are longer than those of the inner bristle group 354. The inner bristle group 356 354 is also trimmed outwardly at an angle of forty-five degrees with respect to the cleaning surface, such that the length of each successive bristle going from the inner end 358 to the outer end 360 of the inner bristle group 356 354 is longer than that of the previous bristle. For example, as illustrated in FIG. 10, bristle 348C is longer than 348B, which is longer than 348A and so forth. Thus, when the bristles in each bristle bundle 350 are flexed outwardly, the tips 362 of the bristles 348 in the inner bristle group 354 contact the cleaning surface to provide better scrubbing action. Also, the difference in height of bristle bundles 334 and 350 allow the longer bristle bundles 334 to clean grout areas or other recessed areas of the floor. Bristle bundles 235 are also compressively inserted into the front corners of the brush support plate 218 for edge cleaning, as shown in FIG. 7.

Please replace the paragraph beginning at page 10, line 3, with the following paragraph:

FIG. 6 shows an upright hard floor-cleaning unit 41 having the brush assembly 316. The hard floor-cleaning unit is similar to that shown in FIG. 1 except for the brush assembly as previously described. Thus, similar reference numbers will be used. The hard floor-cleaning unit 41 comprises an upright handle assembly 42 pivotally connected to the rear portion of a base assembly 44 that moves and cleans along a surface. The base assembly 44 includes a nozzle assembly 62 with a squeegee 66 for recovering particles and/or fluid from the floor and the brush block assembly 316 for scrubbing the floor. The handle assembly 42 includes a recovery tank 53 for collecting the particles and/or fluid picked up by the nozzle assembly 62 and a solution tank 43 containing cleaning solution for distribution on the floor. Both the nozzle assembly 62 and brush block assembly 316 are removable from the base assembly 44. Further details of the cleaning unit 41 are disclosed in the co-pending patent application number 09/956,297[;], the disclosure of which is incorporated by reference. The bristle arrangement of the brush assemblies 216 and 316 of the above-mentioned embodiments can also be incorporate incorporated into the brush assembly shown in co-owned U.S. Pat. No. 6,009,593[;], the disclosure of which is

incorporated by reference.

Please replace the paragraph beginning at page 10, line 19, with the following paragraph:

FIGS. 11 and 11A show still another embodiment of the brush block assembly 416. In particular, the brush assembly 416 comprises a rectilinear brush support member 418 having blind bores into which pliable elements in the form of bristles 476, 478, 480, 482, 494, 496, 498, 500 defining bristles bundles 460, 462, 464, 466 are compressively inserted therein. The brush assembly 416 includes an outer front row 419 of bristles 460, an inner front row 421 of bristle bundles 462, an inner rear row 423 of bristle bundles 464, and an outer rear row 425 of bristle bundles 466. The rows are parallel to the longitudinal axis of the brush support member 418 and also oriented transversely to the cleaning path. The bristle bundles 420 project downwardly from the support member 418 for engagement with the cleaning surface. The bristles in the outer rows 419 and 492 425 are longer than the bristles in the inner rows 421 and 423.

Please replace the paragraph beginning at page 11, line 7, with the following paragraph:

Each of the bristle bundles 460, 462 include respective inner or rear bristle groups 468, 470 and respective outer or front bristle groups 472, 474 that slope or flare outwardly or forwardly with respect to the brush assembly 416 at an angle of thirty degrees with respect to the vertical axis of the brush assembly 416. The bristles 476, 478 of the respective outer bristle groups 472, 474 are longer than the bristles 480, 482 of the respective inner bristle groups 468, 470. Each of the inner bristle groups 468, 470 is also trimmed outwardly at an angle of forty-five degrees with respect to the cleaning surface, such that the length of each successive bristle going from the inner end to the outer end of the inner group 468, 470 is longer than that of the previous bristle. For example, as illustrated in FIG. 11A, bristles 480C and 482C are longer than 480B and 482B, which ~~is~~ are longer than ~~3~~ 4 80A 480A and 482A and so forth. Thus, when the bristles in each of the bristle bundles 460, 462 are flexed outwardly, the tips 484 of the bristles 480, 482 in the respective inner bristle groups 468, 470 contact the cleaning surface to provide better scrubbing action.

Please replace the paragraph beginning at page 11, line 21, with the following paragraph:

Each of the bristle bundles 464 and 466 include respective inner or front bristle groups 485, 486 and respective outer or rear bristle groups 490, 492 that slope or flare outwardly or rearwardly with respect to the brush assembly 416 at an angle of thirty degrees with respect to the vertical axis of the brush assembly 416. The bristles 494, 496 of the respective outer bristle groups 490, 492 are longer than the bristles 498, 500 of the respective inner bristle groups 485, 486. Each of the inner bristle groups 485, 486 is also trimmed outwardly at an angle of forty-five degrees with respect to the cleaning surface, such that the length of each successive bristle going from the inner end to the outer end of the inner group 485, 486 is longer than that of the previous bristle. For example, as illustrated in FIG. 11A, bristles 498C and 500C are longer than 498B and 500B, which ~~is~~ are longer than 498A and 500A and so forth. Thus, when the bristles in each of the bristle bundles 464, 466 are flexed outwardly, the tips 484 of the bristles 498, 500 in the respective inner bristle groups 485, 486 contact the cleaning surface to provide better scrubbing action.

Please replace the paragraph beginning at page 12, line 15, with the following paragraph:

As best shown in FIG. 11, the support member 418 further includes a line of elongated slots 422 spaced longitudinally and disposed between the front and rear edges of the support member 418. A dispensing bar 424 (FIG. 11A) is integrally formed with the bottom of the support member 418, underlying the bottom of slots 422. An additional scrub strip 430 (FIG. 11A) is adhesively mounted on the bottom of the support member 418 rearwardly adjacent the dispensing bar 424.

Please replace the paragraph beginning at page 12, line 21, with the following paragraph:

Together, the dispensing bar 424 and slots 422 define relatively deep compartments or troughs 432 in the support member 418, which break up bubbles of cleaning solution that ~~collects~~ collect therein. The relatively wide troughs 432 also allow easy rinsing and cleaning of dirt ~~in~~ collected therein. Recessed channels 440 are disposed in the upper surface 438 of the support member 418 to direct the cleaning solution to flow into the

troughs 432. Integrally formed on the top surface 446 of the support member 418 are splashguards 436 that surround the channels 440 to prevent the cleaning solution from splashing out of the channels 440. Since the troughs 432 are spaced apart, the collecting of cleaning solution in one area is minimized in case of an error occurring in molding an uneven dispensing bar 424. A pair of outwardly curved ribs 454, 456, which define a handgrip, is attached on the top surface 446 of the support member 418 near the front end. A nub 458 is formed at the forward end of each of the ribs 454, 456 for added grip support.

Please replace the paragraph beginning at page 13, line 10, with the following paragraph:

A pair of locating hooks 442 is attached to the top surface 446 of the support member 418 and extends rearwardly. The hooks 442 are slidably received in a base assembly of floor cleaning unit. Further details of the floor cleaning unit and brush base assembly are described in ~~commonly owned co-pending commonly-owned, co-pending~~ patent application having serial number 10/340,291[[;]], the disclosure of which is incorporated by reference. Optionally, the bristles bundles as a whole for each row may vary in length or height with respect to the cleaning surface. For example, one bristle bundle may be longer than its adjacent bristle bundles to the right and left of it in the row.

Please replace the paragraph beginning at page 13, line 24, with the following paragraph:

Each of the bristle bundles 522 include inner and outer bristle groups 524, 526, respectively, as viewed when the bristle extends down and is located in front of the drum 514. Alternatively, each of the bristles 520 and 521 can slope or flare outwardly with respect to the brush assembly 516 (when the bristle extends down and is located in front of the drum 514) at an angle of thirty degrees with respect to a plane extending radially from the secured end of the bristle and oriented perpendicular to the horizontal axis of the brush ~~roll assembly~~ 516. The bristles 521 of the outer bristle group 526 are longer than the bristles 520 of the inner bristle group 524. The inner bristle group 524 is also trimmed outwardly at an angle of forty-five degrees with respect to a plane across the free ends of the bristles 521 of the outer bristle group 526, such that the length of each successive bristle going from the inner end to the outer end of the inner bristle group 524 is longer than that of the

previous bristle. For example, bristle 520C is longer than 520B, which is longer than 520A and so forth. Thus, when the bristles in each bristle bundle 522 are flexed outwardly, the tips 528 of the bristles 520 in the inner bristle group 524 contact the cleaning surface to provide better scrubbing action. The bristle bundles 520 522, as a whole, for each row vary in length or height with respect to the cleaning surface. For example, bristle bundle 520B 522B is longer than its adjacent bristle bundles 520A 522A and 520C 522C to the right and left of it in the helical row. The brush assembly 516 is rotatably mounted to several floor cleaning machines, such as the floor-cleaning machine 40 of FIG. 1 and the carpet extractors in co-owned U.S. Pat. No. 5,406,673 and U.S. Pat. No. 5,983,442[[],], the disclosures of which are incorporated by reference. The brush assembly 516 is also rotatably mounted to floor cleaning machines, such as U.S. Pat. No. 6,041,472 issued in Kasen[[],]; U.S. Pat. No. 6,467,122 issued to Lenkiewicz[[],]; and U.S. Pat. Nos. 6,533,871 and ~~6073300~~ 6,073,330 issued to Zahuranec[[],], the disclosures of which are incorporated by reference. Brush assemblies 216,316, 216, 316, and 416 from the previous embodiments can also be mounted to these floor-cleaning machines.